IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No.: 9116
ANDERSCH, *et al.*	Art Unit: 1616
Appl. No.: 10/582,134	Examiner: CHUI, Mei Ping
371 (c) Date: June 8, 2006	Atty. Docket: 2400.0470000/RWE/L-Z
For: **Synergistic Insecticidal Mixtures**	

Declaration Under 37 C.F.R. § 1.132

Commissioner for Patents
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Dipl. Biol. Heike Hungenberg hereby declares:

1. That she is a biologist having studied at the University of Giessen, Germany.

2. That she received her diploma degree in biology at the University of Giessen, Germany in 1992.

3. That she entered the employ of Bayer in 1992 and is now employed by Bayer CropScience AG.

4. That she has specialized in plant protection (insecticides).

5. That the following tests have been carried out under her supervision and direction.

6. The expected efficacy of a given combination of two compounds is calculated as follows (*see* Colby, S.R., "Calculating Synergistic and Antagonistic Responses of Herbicide Combinations," Weeds 15, pp. 20-22, 1967):

If

X   is the efficacy expressed in % mortality of the untreated control for test compound A at a concentration of m ppm or m g/ha,

Y   is the efficacy expressed in % mortality of the untreated control for test compound B at a concentration of n ppm or m g/ha,

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E   is the efficacy expressed in % mortality of the untreated control using the mixture of A and B at m and n ppm or m and n g/ha,

then

$$E = X + Y - \frac{X \times Y}{100}$$

7. If the observed insecticidal efficacy of the combination is higher than the one calculated as "E," then the combination of the two compounds is more than additive, *i.e.*, there is a synergistic effect.

Example A

8. *Myzus persicae-* test

Solvent: 7   parts by weight of dimethylformamide

Emulsifier: 2   parts by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration. Cabbage leaves (*Brassica oleracea*) which are heavily infested by the green peach aphid (*Myzus persicae*) are treated by being sprayed with the preparation of the active compound at the desired concentration. After the specified period of time, the mortality in % is determined. 100 % means that all the aphids have been killed; 0 % means that none of the aphids have been killed. In this test, the following combinations according to the present invention demonstrate synergistic effect in comparison to the single compounds as shown in Table A.

9. Table A: *Myzus persicae* - **Test**

Active Ingredient	Concentration (ppm)	Mortality (% after 1 day)	
Thiodicarb	100	0	
	20	0	
	4	0	
	0.8	0	
Clothianidin	20	75	
	4	15	
Thiodicarb + Clothianidin		obs.*	cal.**
(5 : 1)	100 + 20	98	75
According to the invention	20 + 4	65	15
Thiodicarb + Clothianidin		obs.*	cal.**
(1 : 1)	20 + 20	100	75
According to the invention	4 + 4	75	15
Thiodicarb + Clothianidin		obs.*	cal.**
(1 : 5)	4 + 20	94	75
According to the invention	0.8 + 4	55	15
Imidacloprid			
	0.8	25	
Thiodicarb + Imidacloprid		obs.*	cal.**
(5 : 1)	4 + 0.8	70	25
According to the invention			
Thiodicarb + Imidacloprid		obs.*	cal.**
(1 : 1)	0.8 + 0.8	90	25
According to the invention			

* obs. = observed insecticidal efficacy
** cal. = efficacy calculated with Colby-formula

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Example B

10. *Phaedon cochleariae* - **test** (larvae)

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration. Cabbage leaves (*Brassica oleracea*) are treated by being sprayed with the preparation of the active compound in the desired concentration and are infested with larvae of the mustard beetle (*Phaedon cochleariae*) as long as the leaves are still moist. After the specified period of time, the mortality in % is determined. 100 % means that all the beetle larvae have been killed; 0 % means that none of the beetle larvae have been killed. In this test, the following combinations according to the present invention demonstrate synergistic effect in comparison to the single compounds as shown in Tables B1 and B2.

11. Table B1: *Phaedon cochleariae* – Test (larvae)

Active Ingredient	Concentration (ppm)	Mortality (% after 1 day)	
Thiodicarb	100	0	
	20	0	
Imidacloprid	100	50	
Thiodicarb + Imidacloprid (1 : 1) According to the invention	100 + 100	obs.* 80	cal.** 50
Thiodicarb + Imidacloprid (1 : 5) According to the invention	20 + 100	obs.* 100	cal.** 50

* obs. = observed insecticidal efficacy
** cal. = efficacy calculated with Colby-formula

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12. Table B2: *Phaedon cochleariae* – Test (larvae)

Active Ingredient	Concentration (ppm)	Mortality (% after 6 days)	
Thiodicarb	4	0	
Clothianidin	20	85	
Thiodicarb + Clothianidin (1 : 5) According to the invention	4 + 20	obs.* 100	cal.** 85

* obs. = observed insecticidal efficacy
** cal. = efficacy calculated with Colby-formula

Example C

13. *Plutella xylostella* -Test (sensible strain)

      Solvent: 7   parts by weight of dimethylformamide

      Emulsifier: 2   parts by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration. Cabbage leaves (*Brassica oleracea*) are treated by being sprayed with the preparation of the active compound in the desired concentration and are infested with larvae of the diamond back moth (*Plutella xylostella*) as long as the leaves are still moist. After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed. In this test, the following combinations according to the present invention demonstrate synergistic effect in comparison to the single compounds as shown in Tables C1 and C2.

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14. Table C1: *Plutella xylostella* – Test

Active Ingredient	Concentration (ppm)	Mortality (% after 2 days)	
Thiodicarb	100	20	
	20	0	
Clothianidin	100	40	
	20	0	
	4	0	
Thiodicarb + Clothianidin		obs.*	cal.**
(5 : 1)	100 + 20	70	20
According to the invention	20 + 4	15	0
Thiodicarb + Clothianidin		obs.*	cal.**
(1 : 1)	100 + 100	80	52
According to the invention	20 + 20	35	0

* obs. = observed insecticidal efficacy
** cal. = efficacy calculated with Colby-formula

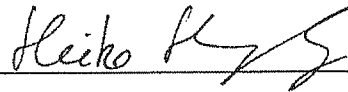15. Table C2: *Plutella xylostella* – Test

Active Ingredient	Concentration (ppm)	Mortality (% after 6 days)	
Thiodicarb			
	20	30	
Imidacloprid	100	45	
	20	0	
Thiodicarb + Imidacloprid		obs.*	cal.**
(1 : 1)	20 + 20	50	30
According to the invention			
Thiodicarb + Imidacloprid		obs.*	cal.**
(1 : 5)	20 + 100	90	61.5
According to the invention			

* obs. = observed insecticidal efficacy
** cal. = efficacy calculated with Colby-formula

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16. The undersigned declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

24.02.2010

Date

Heike Hungenberg